



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

HRE-8J

April 21, 1993

Mr. Tom Schwake  
Environmental Engineer  
John Deere Foundry  
Highway 84 at 14th Avenue  
East Moline, Illinois 61244

Re: Visual Site Inspection  
John Deere Foundry  
Silvis, Illinois  
ILD 075 607 119

Dear Mr. Schwake:

The U.S. Environmental Protection Agency is enclosing a copy of the final Preliminary Assessment/Visual Site Inspection (PA/VSI) report for the referenced facility. The executive summary and conclusions and recommendations sections have been withheld as Enforcement Confidential.

If you have any questions, please call Francene Harris at (312) 886-2884.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Kevin M. Pierard".

Kevin M. Pierard, Chief  
Minnesota/Ohio Technical Enforcement Section  
RCRA Enforcement Branch



*Comp.*

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION 5**  
**77 WEST JACKSON BOULEVARD**  
**CHICAGO, IL 60604-3590**

REPLY TO THE ATTENTION OF:

HRE-8J

August 27, 1992

Mr. Tom Schwake  
John Deere Foundry  
Highway 84 and 14th Ave.  
East Moline, IL 61244-2395

Re: Visual Site Inspection  
John Deere Foundry  
ILD 075 607 119

Dear Mr. Schwake:

The United States Environmental Protection Agency (U.S. EPA) Region V will conduct a Preliminary Assessment including a Visual Site Inspection (PA/VSI) at the referenced facility. This inspection is conducted pursuant to the Resource Conservation and Recovery Act, as amended (RCRA) Section 3007 and the Comprehensive Environmental Response, Compensation, and Liability Act, as amended (CERCLA) Section 104(e). The referenced facility has generated, treated, stored, or disposed of hazardous waste subject to RCRA. The PA/VSI requires identification and systematic review of all solid waste streams at the facility. The objective of the PA/VSI is to determine whether or not releases of hazardous wastes or hazardous constituents have occurred or are occurring at the facility which may require further investigation. This analysis will also provide information to establish priorities for addressing any confirmed releases.

The visual site inspection of your facility is to verify the location of all solid waste management units (SWMUs) and areas of concern (AOCs) to make a cursory determination of their condition by visual observation. The definitions of SWMUs and AOCs are included in Attachment I. The VSI supplements and updates data gathered during a preliminary file review. During this site inspection, no samples will be taken. A sampling visit to ascertain if releases of hazardous waste or constituents have occurred may be required at a later date.

Assistance of some of your personnel may be required in reviewing solid waste flow(s) or previous disposal practices. The site inspection is to provide a technical understanding of the present and past waste flows and handling, treatment, storage, and disposal practices. Photographs of the facility are necessary to document the condition of the units at the facility and the waste management practices used.



August 27, 1992  
Page 2

The VSI has been scheduled for September 1, 1992, at 9:00 a.m. The inspection team will consist of William Earle and Laura Czajkowski of Resource Applications, Inc., a contractor for the U.S. EPA. Representatives of the Illinois Environmental Protection Agency (IEPA) may also be present. Your cooperation in admitting and assisting them while on site is appreciated.

The U.S. EPA recommends that personnel who are familiar with the present and past manufacturing and waste management activities be available during the VSI. Access to any relevant maps, diagrams, hydrogeologic reports, environmental assessment reports, sampling data sheets, environmental permits (air, NPDES), manifests and/or correspondence is also necessary, as such information is needed to complete the PA/VSI. Attachment II is a summary of the information required.

If you have any questions, please contact me at (312) 886-4448 or Francene Harris at (312) 886-2884. A copy of the Preliminary Assessment/Visual Site Inspection Report, excluding the conclusions and Executive Summary portion will be sent when the report is available.

Sincerely yours,



Kevin M. Pierard, Chief  
OH/MN Technical Enforcement Section

enclosure

cc: Larry Eastep, IEPA Springfield  
John Tripses, IEPA Peoria

## ATTACHMENT I

John Deere Foundry  
Highway 84 and 14th Ave.  
East Moline, IL 61244-2395

The definitions of solid waste management unit (SWMU) and area of concern (AOC) are as follows.

A SWMU is defined as any discernable unit where solid wastes have been placed at any time from which hazardous constituents might migrate, regardless of whether the unit was intended for the management of a solid or hazardous waste.

The SWMU definition includes the following:

- RCRA regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells
- Closed and abandoned units
- Recycling units, wastewater treatment units, and other units that U.S. Environmental Protection Agency has generally exempted from standards applicable to hazardous waste management units
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents, such as wood preservative treatment dripping areas, loading or unloading areas, or solvent washing areas

An AOC is defined as any area where a release to the environment of hazardous wastes or constituents has occurred or is suspected to have occurred on a nonroutine or nonsystematic basis. This includes any area where such a release in the future is judged to be a strong possibility.

## ATTACHMENT II

### PROBABLE SOLID WASTE MANAGEMENT UNITS (SWMUs)

1. Little information was available to compile a list of solid waste management units (SWMUs) at your facility. Please list all waste management units at your facility. If possible, please provide as complete information for the waste unit in response to the questions below.

**From the list of probable SWMUs please address the following questions:**

- Do the above SWMUs still exist at the facility and are they in operation?
  - What are the start-up and closure dates of the above SWMUs?
  - What types of wastes are the SWMUs currently/formerly used for?
  - Name any SWMUs at your facility that have not been listed above. These would include hazardous waste storage areas, treatment units, or any other area or system at your facility dealing with hazardous waste including satellite accumulation areas.
  - What are the average volumes and rates of generation of waste streams?
  - Document any releases that have occurred at the facility. This includes spills or leaks of both wastes and raw product. Outline the action taken to clean up the release.
2. Please supply as much information as possible concerning the site history. This would include any information you have regarding operations and any other owner/operators at this location.
  3. Please provide a description of the primary processes taking place at your facility and the waste streams which are generated.
  4. Describe the methods of treatment and disposal of generated waste utilized by your facility.

If available, the following items are requested:

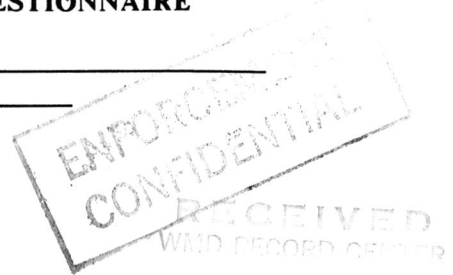
- A detailed map of the facility showing the location of the SWMUs and production stations.
- Flow diagrams showing waste streams and waste management practices.
- Copies of any permits currently held by the facility.
- SARA Title III information and a copy of the facility contingency plan.

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## CORRECTIVE ACTION STABILIZATION QUESTIONNAIRE

Completed by: Mary Wojciechowski

Date: December 21, 1992



### Background Facility Information

Facility Name: John Deere Foundry

EPA Identification No.: ILD 075 607 119

Location (City, State): Silvis, Illinois

Facility Priority Rank: Moderate

1. Is this checklist being completed for one solid waste management unit (SWMU), several SWMUs, or the entire facility? Explain.

Entire facility which includes 10 SWMUs and 1 AOC

### Status of Corrective Action Activities at the Facility

2. What is the current status of HSWA corrective action activities at the facility?

- ☐ No corrective action activities initiated (Go to 5)  
☒ RCRA Facility Assessment (RFA) or equivalent completed  
☐ RCRA Facility Investigation (RFI) underway  
☐ RFI completed  
☐ Corrective Measures Study (CMS) completed  
☐ Corrective Measures Implementation (CMI) begun or completed  
☐ Interim Measures begun or completed

3. If corrective action activities have been initiated, are they being carried out under a permit or an enforcement order?

- ☐ Operating permit  
☒ Post-closure permit  
☐ Enforcement order  
☒ Other (Explain)

Corrective action has been carried out on 3 non-RCRA units under the provisions of an IEPA landfill permit and an IEPA approved closure plan and state UST requirements.

4. Have interim measures, if required or completed [see Question 2], been successful in preventing the further spread of contamination at the facility?

- ☐ Yes  
☐ No  
☐ Uncertain; still underway  
☒ Not required

Additional explanatory notes:

Interim measures have not been formally required for this facility.

### Facility Releases and Exposure Concerns

5. To what media have contaminant releases from the facility occurred or been suspected of occurring?

☒ Ground water  
☐ Surface water  
☐ Air  
☒ Soils

6. Are contaminant releases migrating off-site?

☐ Yes; Indicate media, contaminant concentrations, and level of certainty.

Groundwater:

Surface water:

Air:

Soils:

☐ No  
☒ Uncertain

- 7a. Are humans currently being exposed to contaminants released from the facility?

☐ Yes (Go to 8a)  
☐ No  
☒ Uncertain

Additional explanatory notes:

It is not known if contaminants are migrating off site.

- 7b. Is there a potential for human exposure to the contaminants released from the facility over the next 5 to 10 years?

☒ Yes  
☐ No  
☐ Uncertain

Additional explanatory notes:

Ground water is used as a source of drinking water at the facility.

- 8a. Are environmental receptors currently being exposed to contaminants released from the facility?

☐ Yes (Go to 9)  
☐ No  
☒ Uncertain

Additional explanatory notes:

There is a wetland on site but it is not known if this wetland has been affected by contamination on site.

- 8b. Is there a potential that environmental receptors could be exposed to the contaminants released from the facility over the next 5 to 10 years?

☒ Yes  
☐ No  
☐ Uncertain

Additional explanatory notes:

There is a wetland on site but it is not known if this wetland has been affected by contamination on site.



### Anticipated Final Corrective Measures

9. If already identified or planned, would final corrective measures be able to be implemented in time to adequately address any existing or short-term threat to human health and the environment?

☐ Yes  
☒ No  
☐ Uncertain

Additional explanatory notes:

Final corrective measures have not been identified or planned.

10. Could a stabilization initiative at this facility reduce the present or near-term (e.g., less than two years) risks to human health and the environment?

☐ Yes  
☐ No  
☒ Uncertain

Additional explanatory notes:

Further sampling (both on and off site) is needed to make this determination.

11. If a stabilization activity were not begun, would the threat to human health and the environment significantly increase before final corrective measures could be implemented?

☐ Yes  
☐ No  
☒ Uncertain

Additional explanatory notes:

Further sampling (both on and off site) is needed to make this determination.

### Technical Ability to Implement Stabilization Activities

12. In what phase does the contaminant exist under ambient site conditions? Check all that apply.

☐ Solid  
☒ Light non-aqueous phase liquids (LNAPLs)  
☐ Dense non-aqueous phase liquids (DNAPLs)  
☒ Dissolved in ground water or surface water  
☐ Gaseous  
☐ Other \_\_\_\_\_

13. Which of the following major chemical groupings are of concern at the facility?

☒ Volatile organic compounds (VOCs) and/or semi-volatiles  
☐ Polynuclear aromatics (PAHs)  
☐ Pesticides  
☐ Polychlorinated biphenyls (PCBs) and/or dioxins  
☐ Other organics  
☒ Inorganics and metals  
☐ Explosives  
☐ Other \_\_\_\_\_

14. Are appropriate stabilization technologies available to prevent the further spread of contamination, based on contaminant characteristics and the facility's environmental setting? [See Attachment A for a listing of potential stabilization technologies.]

☐ Yes; Indicate possible course of action.

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☒ No; Indicate why stabilization technologies are not appropriate; then go to Question 18.

Further sampling (both on and off site) is needed to make this determination.

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15. Has the RFI, or another environmental investigation, provided the site characterization and waste release data needed to design and implement a stabilization activity?

☐ Yes  
☐ No

If No, can these data be obtained faster than the data needed to implement the final corrective measures?

☐ Yes  
☐ No

#### Timing and Other Procedural Issues Associated with Stabilization

16. Can stabilization activities be implemented more quickly than the final corrective measures?

☐ Yes  
☐ No  
☐ Uncertain

Additional explanatory notes:

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17. Can stabilization activities be incorporated into the final corrective measures at some point in the future?

☐ Yes  
☐ No  
☐ Uncertain

Additional explanatory notes:

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**Conclusion**

18. Is this facility an appropriate candidate for stabilization activities?

- ☐ Yes
- ☐ No, not feasible
- ☐ No, not required
- ☒ Further investigation necessary

Explain final decision, using additional sheets if necessary.

The following information was obtained from a 1992 PA/VSI report by RAI.

Past corrective actions have been carried out on an inactive non-RCRA landfill, inactive non-RCRA oil skimming lagoons, and an UST removal area. These actions took place under the provisions of an IEPA landfill permit, an IEPA approved closure plan, and IEPA UST requirements, respectively.

In 1990, VOC contamination was discovered in the uppermost aquifer beneath the facility. The facility believes that the contamination is from an adjacent facility. Further investigation is needed to determine the source of the contamination and its potential impact on human health and the environment.

PRC Environmental Management, Inc.  
233 North Michigan Avenue  
Suite 1621  
Chicago, IL 60601  
312-856-8700  
Fax 312-938-0118



**PRELIMINARY ASSESSMENT/  
VISUAL SITE INSPECTION**

**JOHN DEERE FOUNDRY  
SILVIS, ILLINOIS  
ILD 075 607 119**

**FINAL REPORT**

**Prepared for**

**U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Waste Programs Enforcement  
Washington, DC 20460**

Work Assignment No.	:	C05087
EPA Region	:	5
Site No.	:	ILD 075 607 119
Date Prepared	:	March 23, 1993
Contract No.	:	68-W9-0006
PRC No.	:	009-C05087IL4Y
Prepared by	:	Resource Applications, Inc. (William Earle)
Contractor Project Manager	:	Shin Ahn
Telephone No.	:	(312) 856-8700
EPA Work Assignment Manager	:	Kevin Pierard
Telephone No.	:	(312) 886-4448

## TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
EXECUTIVE SUMMARY .....	ES-1
1.0 INTRODUCTION .....	1
2.0 FACILITY DESCRIPTION .....	4
2.1 FACILITY LOCATION .....	4
2.2 FACILITY OPERATIONS .....	4
2.3 WASTE GENERATION AND MANAGEMENT .....	6
2.4 HISTORY OF DOCUMENTED RELEASES .....	15
2.5 REGULATORY HISTORY .....	16
2.6 ENVIRONMENTAL SETTING .....	19
2.6.1 Climate .....	19
2.6.2 Flood Plain and Surface Water .....	19
2.6.3 Geology and Soils .....	20
2.6.4 Ground Water .....	20
2.7 RECEPTORS .....	21
3.0 SOLID WASTE MANAGEMENT UNITS .....	23
4.0 AREAS OF CONCERN .....	33
5.0 CONCLUSIONS AND RECOMMENDATIONS .....	35
REFERENCES .....	42

### Attachment

- A EPA PRELIMINARY ASSESSMENT FORM 2070-12
- B VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS
- C VISUAL SITE INSPECTION FIELD NOTES



## LIST OF TABLES

<u>Table</u>	<u>Page</u>
1 SOLID WASTE MANAGEMENT UNITS .....	7
2 SOLID WASTES .....	10
3 SWMU AND AOC SUMMARY .....	40

## LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1 FACILITY LOCATION .....	5
2 FACILITY LAYOUT 1 .....	8
3 FACILITY LAYOUT 2 .....	9

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## EXECUTIVE SUMMARY

Resource Applications, Inc. (RAI), performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and likelihood of releases from solid waste management units (SWMU) and other areas of concern (AOC) at the John Deere Foundry (Deere) in Silvis, Illinois. This summary highlights the results of the PA/VSI and the potential for releases of hazardous wastes or hazardous constituents from SWMUs and AOCs identified. In addition, a completed U.S. Environmental Protection Agency (EPA) Preliminary Assessment Form (EPA Form 2070-12) is included in Attachment A to assist in prioritizing RCRA facilities for corrective action.

The Deere facility manufactures ductile iron castings from scrap steel. The primary waste streams generated at the facility are waste mold cleaning solvent (D001, F003), waste resin (D001), and the following nonhazardous wastes: foundry sand and dust, furnace wastes, shop waste oil, waste skim oil, paint waste, core room air scrubber waste, waste oil absorbent, exothermic sleeve waste, and industrial wastewater. Wastes generated in the past were arc furnace dust (D007), 1,1,1-trichloroethane (F002), and wastes containing polychlorinated biphenyls (PCB). An oily wastewater, generated by an adjacent facility, was also managed on Deere property.

Deere has operated the facility since it was built in 1968. The facility presently employs about 400 people in two shifts. Facility access is controlled by means of a fence, which surrounds the facility, video cameras, and a 24-hour guard. The facility consists of an 800,000 square foot building on 147 acres of land. The facility is still used for its original purpose, that of a foundry to manufacture ductile iron castings. Deere is planning to close this facility in 1993.

The facility RCRA-closed its Former Hazardous Waste Storage Area (SWMU 5) in 1985. The facility is currently regulated as a small-quantity generator of hazardous wastes. The facility closed (non-RCRA) the Former Oil Skimming Lagoon (SWMU 2) in 1981, and is partially closing (non-RCRA) the Landfill (SWMU 1) at present.

The Deere facility has two EPA identification (ID) numbers: ILD 049 389 406 and ILD 075 607 119. The first of these numbers was given to Deere by EPA by phone at Deere's request before submittal of the Part A permit application, and after submittal of the Notification of

Hazardous Waste Activity, so as to comply with RCRA manifest regulations. The second was received by mail in November 1980. After Deere discussed the matter of the two EPA ID numbers with EPA Region 5, EPA decided on November 26, 1980, that the second ID number was the correct number and would be used henceforth.

The Deere facility has been the subject of CERCLA activity. A Notification of Hazardous Waste Site was filed by Deere on October 6, 1981. This notification related to the oil skimming lagoons. A Potential Hazardous Waste Site Preliminary Assessment form was completed by the Illinois Environmental Protection Agency (IEPA) on April 17, 1984, with reference to the oil skimming lagoons and the landfill. This assessment determined that the site should be inspected on a low priority basis. On March 5, 1985, the facility was inspected by a Field Investigative Team (FIT) from EPA. The purpose of the FIT inspection was to look at the Landfill (SWMU 1) and Former Oil Skimming Lagoons (SWMU 2). Following the FIT inspection, the site was scored using the Hazard Ranking System. This scoring addressed only SWMU 1 and SWMU 2. The site's overall score was 20.01. No further action has been taken as a result of this. No recommendations were made by FIT, and there is no indication from the files reviewed during the PA that further action is planned.

The PA/VSI identified the following 10 SWMUs and one AOC at the facility:

Solid Waste Management Units

1. Landfill
2. Former Oil Skimming Lagoons
3. Air Emissions Control System
4. Hazardous Waste Storage Area
5. Former Hazardous Waste Storage Area
6. Pattern Shop Accumulation Area
7. Foundry Sand Accumulation Area
8. Wastewater Treatment System
9. Oil Skimmer
10. Dumpster

Area of Concern

1. Ground Water Contamination Area

The nearest surface water body is an on-site retention/cooling pond and adjacent marsh,

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located at the eastern portion of the facility. This pond discharges under a National Pollutant Discharge Elimination System (NPDES) permit to an unnamed stream that flows north to Sugar Creek, which is used for drainage and recreation, and ultimately discharges into the Mississippi River.

Ground water is used as a drinking water source. The nearest drinking water well is located approximately 400 feet south of the facility. This well is 405 feet deep and is set in dolomite. The hydraulic gradient of this well is not known. No drinking water wells within 1 mile of the site draw water from the glacial overburden materials. All drinking water wells draw water from deep aquifers. There is documented ground water contamination (AOC 1, the Ground Water Contamination Area) of volatile organic compounds on Deere property in the shallow aquifer. Deere and their consultants (Beling Consultants) believe the contamination comes from an adjacent facility.

Sensitive environments are located on site. The retention/cooling pond is classified as a palustrine, unconsolidated bottom, intermittently exposed, excavated wetland. The nearest school, East Moline High School, is located about 0.25 mile southwest of the facility. Facility access is controlled by an 8-foot-high fence topped with barbed wire. The facility also uses closed circuit cameras to monitor entrances, and is patrolled 24 hours a day.

The potential for release to ground water, surface water, air, and on-site soils from the SWMUs is low, due to the wastes managed, the location of the SWMUs, or the SWMUs having been closed or RCRA-closed in accordance with an IEPA-approved closure plan. AOC 1 has known ground water contamination and therefore a high probability of soil contamination. The potential for release to surface water or air from AOC 1 is low due to an intervening clay layer. RAI recommends no further action for SWMUs 2 through 10. RAI is recommending that ground water monitoring continue per IEPA guidelines for SWMU 1. RAI is recommending that AOC 1 be further investigated and remediated if necessary.

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## 1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC), received Work Assignment No. C05087 from the U.S. Environmental Protection Agency (EPA) under Contract No. 68-W9-0006 (TES 9) to conduct preliminary assessments (PA) and visual site inspections (VSI) of hazardous waste treatment and storage facilities in Region 5. Resource Applications, Inc. (RAI), TES 9 team member, provided the necessary assistance to complete the PA/VSI activities for the John Deere Foundry (Deere) facility.

As part of the EPA Region 5 Environmental Priorities Initiative, the RCRA and CERCLA programs are working together to identify and address RCRA facilities that have a high priority for corrective action using applicable RCRA and CERCLA authorities. The PA/VSI is the first step in the process of prioritizing facilities for corrective action. Through the PA/VSI process, enough information is obtained to characterize a facility's actual or potential releases to the environment from solid waste management units (SWMU) and areas of concern (AOC).

A SWMU is defined as any discernible unit at a RCRA facility in which solid wastes have been placed and from which hazardous constituents might migrate, regardless of whether the unit was intended to manage solid or hazardous waste.

The SWMU definition includes the following:

- RCRA-regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells
- Closed and abandoned units
- Recycling units, wastewater treatment units, and other units that EPA has usually exempted from standards applicable to hazardous waste management units
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents. Such areas might include a wood preservative drippage area, a loading or unloading area, or an area where solvent used to wash large parts has continually dripped onto soils.



An AOC is defined as any area where a release of hazardous waste or constituents to the environment has occurred or is suspected to have occurred on a nonroutine and nonsystematic basis. This includes any area where a strong possibility exists that such a release might occur in the future.

The purpose of the PA is as follows:

- Identify SWMUs and AOCs at the facility
- Obtain information on the operational history of the facility
- Obtain information on releases from any units at the facility
- Identify data gaps and other informational needs to be filled during the VSI

The PA generally includes review of all relevant documents and files located at state offices and at the EPA Region 5 office in Chicago.

The purpose of the VSI is as follows:

- Identify SWMUs and AOCs not discovered during the PA
- Identify releases not discovered during the PA
- Provide a specific description of the environmental setting
- Provide information on release pathways and the potential for releases to each medium
- Confirm information obtained during the PA regarding operations, SWMUs, AOCs, and releases

The VSI includes interviewing appropriate facility staff; inspecting the entire facility to identify all SWMUs and AOCs; photographing all visible SWMUs; identifying evidence of releases; making a preliminary selection of potential sampling parameters and locations, if needed; and obtaining additional information necessary to complete the PA/VSI report.

This report documents the results of a PA/VSI of the Deere facility (EPA Identification (ID)

Nos. ILD 075 607 119 and ILD 049 389 406) in Silvis, Illinois. As of November 26, 1980, the Deere facility's ID number is ILD 075 607 119. The PA was completed on August 31, 1992. RAI gathered and reviewed information from the Illinois Environmental Protection Agency (IEPA) and from EPA Region 5 RCRA files. The VSI was conducted on September 1, 1992. It included interviews with facility representatives and a walk-through inspection of the facility. RAI identified 10 SWMUs and one AOC at the facility.

RAI completed EPA Form 2070-12 using information gathered during the PA/VSI. This form is included as Attachment A. The VSI is summarized and nine inspection photographs are included in Attachment B. Field notes from the VSI are included in Attachment C.

## **2.0 FACILITY DESCRIPTION**

This section describes the facility's location; past and present operations; waste generating processes and waste management practices; a history of documented releases; regulatory history; environmental setting; and receptors.

### **2.1 FACILITY LOCATION**

The Deere facility is located at Highway 84 and 14th Avenue in Silvis, Rock Island County, Illinois (latitude 41°31'23" N and longitude 90°25'18" W). The facility occupies 147 acres in a mixed industrial and residential area. The facility and its relationship to surrounding topographic features is shown in Figure 1.

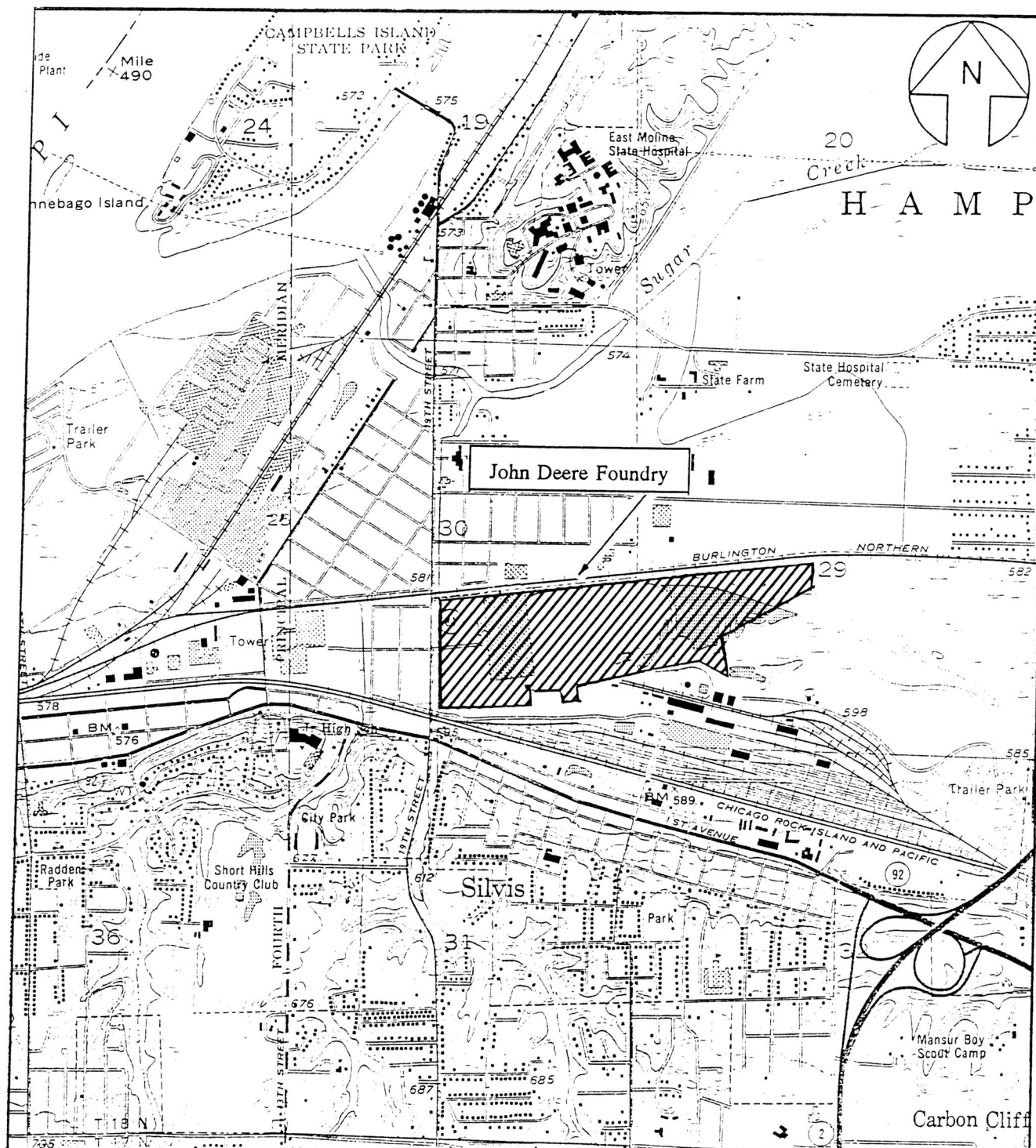
The Deere facility is bordered on the north by residences and industry, on the west by residences, on the south by a railroad locomotive equipment shop, and on the east by industrial facilities.

### **2.2 FACILITY OPERATIONS**

The Deere facility was built for Deere & Company (the corporation's name) in 1968 on land that had been previously owned by the Chicago, Rock Island and Pacific Railroad. The facility is a foundry that melts steel scrap to manufacture various ductile iron parts for trucks and heavy equipment. Solid wastes generated from facility operations and the SWMUs where they are managed are discussed in detail in Section 2.3.

The facility presently employs about 400 people in two shifts. Facility access is controlled by means of a fence which surrounds the facility, video cameras, and 24-hour guards, who patrol the entire facility. The facility consists of an 800,000 square foot building on 147 acres of land. The facility is still used for its original purpose, that of a foundry to manufacture ductile iron castings. Deere & Company is planning to close this facility in 1993.





John Deere Foundry  
Silvis, Illinois

Figure 1  
FACILITY LOCATION

Scale: 1"=2,000'  
Source: Modified from USGS, 1975

 Resource Applications, Inc.

The primary operation at the facility is the manufacture of ductile iron castings. Scrap steel meeting certain specifications (sheet or plate steel, unpainted, oil-free) is received by the facility in trucks. After weighing and inspecting, the steel is accumulated in bins prior to being placed in one of the six arc furnaces for melting and reduction into iron. Molten iron is then transferred to a holding furnace prior to being poured into molds for casting. Castings are then allowed to cool, removed from the mold, ground as necessary to shape, and shipped.

The molds are made primarily of three materials; silica sand, western bentonite, and secoal, which are managed in outdoor silos. These materials are mixed together with water and formed into the molds in steel mold boxes that are used in the casting operation. Some of the parts require a hollowed core. This core is formed from the same materials as the molds. In addition, N-N dimethylethylamine (DMEA) is used as a binder because it volatilizes and allows easy removal of the core. The DMEA used is received in 55-gallon drums and is stored in the flammable materials room until needed.

Supporting operations at the facility include machinery maintenance; facility maintenance, including painting; mold box cleaning and repair; and administrative support. The facility has two aboveground storage tanks that are used to store gasoline and diesel fuel for use in facility vehicles. These aboveground tanks replace two underground tanks, which were removed in 1990 and are awaiting Leaking Underground Storage Tank (LUST) closure. In addition, the facility has sumps located in the basement. These sumps are used to remove ground water that infiltrates into the basement. The sumps discharge through the Oil Skimmer (SWMU 9) to the East Moline publicly owned treatment works (POTW).

## **2.3 WASTE GENERATION AND MANAGEMENT**

Wastes are generated and managed at various locations throughout the facility. SWMUs and their current status are identified in Table 1. The locations of SWMUs 1 and 2 and AOC 1 in relation to the facility layout are shown in Figure 2. The locations of SWMUs 3 through 10 are shown in Figure 3. Present and past wastes generated at the facility are summarized in Table 2. SWMUs are discussed in detail in Section 3.0. Facility generation and management of both hazardous and nonhazardous wastes are discussed below.



**TABLE 1**  
**SOLID WASTE MANAGEMENT UNITS**

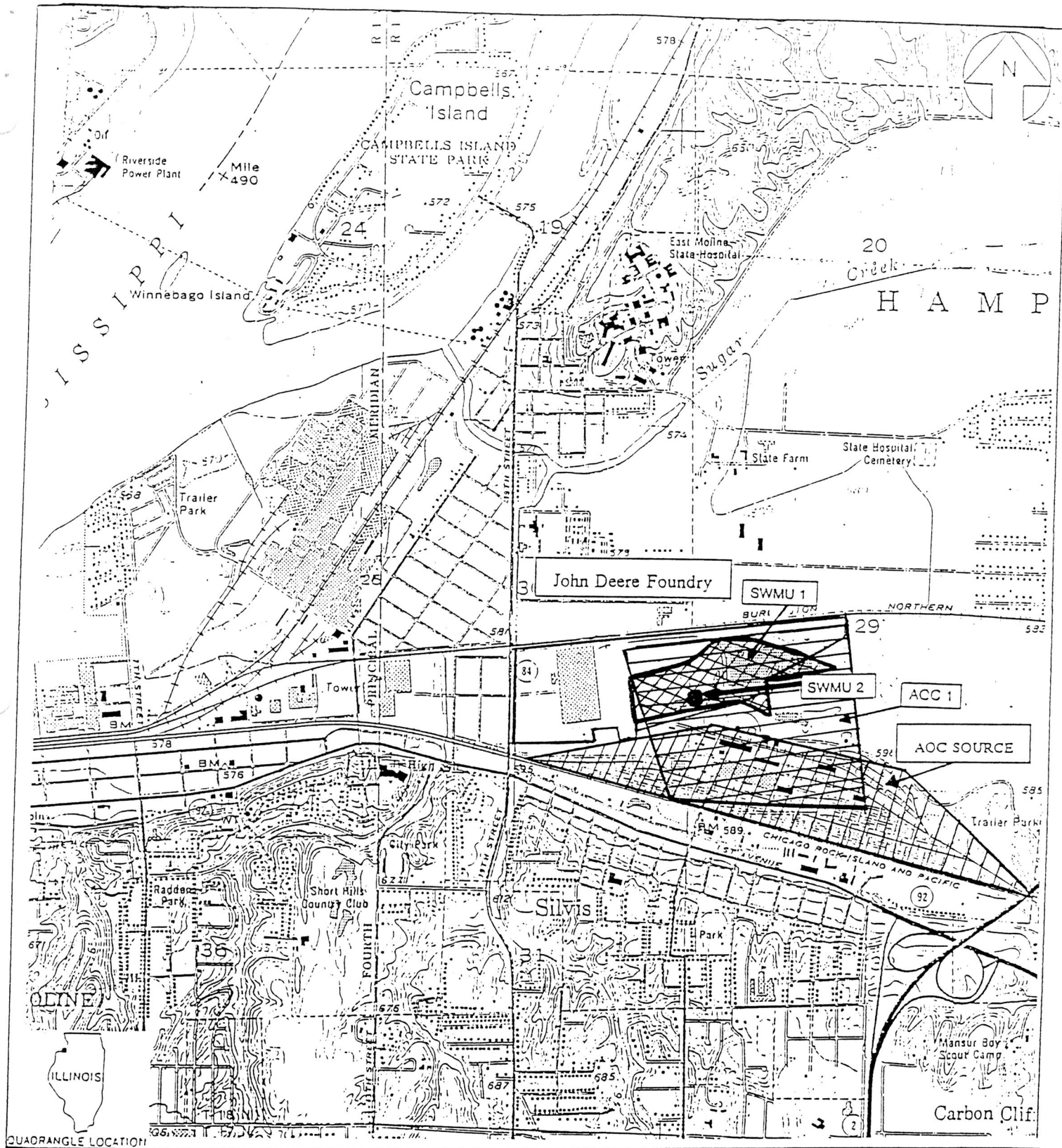
<u>SWMU Number</u>	<u>SWMU Name</u>	<u>RCRA Hazardous Waste Management Unit<sup>a</sup></u>	<u>Status</u>
1	Landfill	No	Active, a portion is undergoing final landfill closure
2	Former Oil Skimming Lagoons	No	Closed, inactive
3	Air Emissions Control System	No	Active
4	Hazardous Waste Storage Area	No	Active, presently storing hazardous wastes for less than 90 days
5	Former Hazardous Waste Storage Area	Yes	RCRA-closed, inactive.
6	Pattern Shop Accumulation Area	No	Active
7	Foundry Sand Accumulation Area	No	Active
8	Wastewater Treatment System	No	Active
9	Oil Skimmer	No	Active
10	Dumpster	No	Active

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Note:

<sup>a</sup> A RCRA hazardous waste management unit is one that currently requires or formerly required submittal of a RCRA Part A or Part B permit application.

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#### Solid Waste Management Units (SWMU)

1. Landfill
2. Former Oil Skimming Lagoons

#### Area of Concern (AOC)

1. Ground Water Contamination Area

AOC Source: Deere-Alleged Source of Ground Water Contamination

8

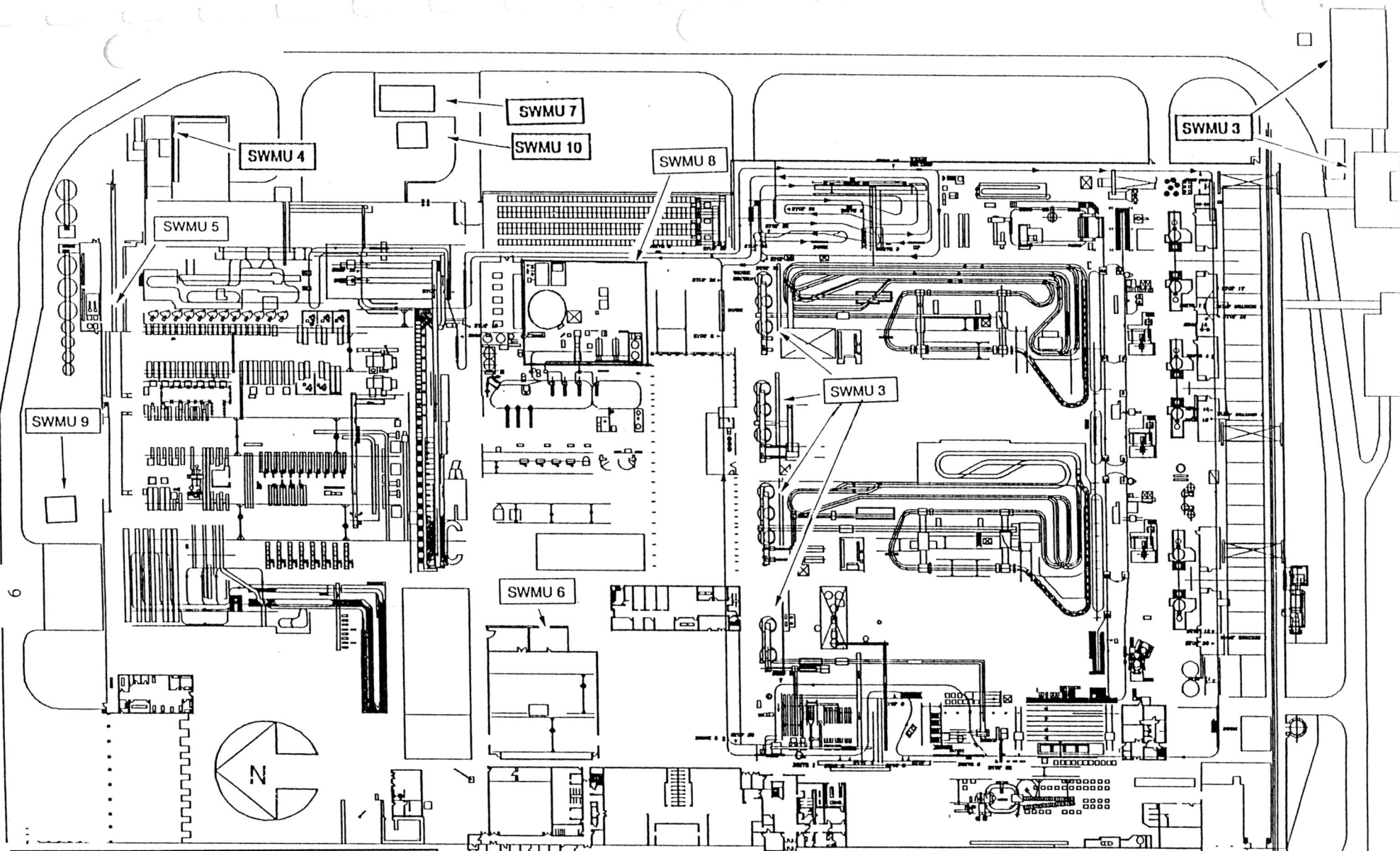
John Deere Foundry  
Silvis, Illinois

Figure 2  
FACILITY LAYOUT 1

Scale: 1" = 2,000'  
Source: Modified from USGS, 1975

Resource Applications, Inc.





**Solid Waste Management Units (SWMU)**

3. Air Emissions Control System
4. Hazardous Waste Storage Area
5. Former Hazardous Waste Storage Area
6. Pattern Shop Accumulation Area
7. Foundry Sand Accumulation Area
8. Wastewater Treatment System
9. Oil Skimmer
10. Dumpster

Not to Scale

John Deere Foundry  
Silvis, Illinois

Figure 3  
FACILITY LAYOUT 2

 Resource Applications, Inc.

Source: Modified from Deere, 1992

**TABLE 2**  
**SOLID WASTES**

<u>Waste/EPA Waste Code<sup>a</sup></u>	<u>Source</u>	<u>Solid Waste Management Unit<sup>b</sup></u>
Waste Mold Cleaning Solvent/D001, F003	Cleaning of mold boxes	4 and 6, formerly 5
Waste Resin/D001	Unusable resin	4, formerly 5
Waste Foundry Sand and Dust/NA	Foundry operations, dust collectors	1, 3, and 7
Furnace Wastes/NA	Operation and maintenance of furnaces	1, 3, and 7
Shop Waste Oil/NA	Equipment maintenance	4, formerly 5
Waste Skim Oil/NA	Oil Skimmers	9
Paint Wastes/NA, D001, F013	Painting	4, formerly 5
Core Room Air Scrubber Waste/NA, D002	Air Emissions Control System	3 and 4, formerly 5
Waste Oil Absorbent/NA	Maintenance operations	10
Exothermic Sleeve Waste/NA	Mold Boxes	10
Industrial Wastewater/NA	Dust collectors	8

---

Notes:

<sup>a</sup> Not applicable (NA) designates nonhazardous waste.

<sup>b</sup> "None" indicates that the waste stream is not managed on site.

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**TABLE 2 (continued)**

**SOLID WASTES**

<u>Waste/EPA Waste Code<sup>a</sup></u>	<u>Source</u>	<u>Solid Waste Management Unit<sup>b</sup></u>
Arc Furnace Dust/D007	Electric arc furnaces	Formerly 3
1,1,1-Trichloroethane/F002	Experimental process	Formerly 4
Polychlorinated Biphenyls (PCB)- Containing Wastes	Electrical equipment removed	None
Oily Wastewater	Off-site railroad shop	Formerly 2

Notes:

<sup>a</sup> Not applicable (NA) designates nonhazardous waste.

<sup>b</sup> "None" indicates that the waste stream is not managed on site.



The primary waste streams generated at the Deere facility are waste mold cleaning solvent (D001, F003), waste resin (D001) and the following nonhazardous wastes: foundry sand and dust, furnace wastes, shop waste oil, waste skim oil, paint wastes, core room air scrubber waste, waste oil absorbent, exothermic sleeve waste, and industrial wastewater. Wastes generated in the past were arc furnace dust (D007), 1,1,1-trichloroethane (F002), and wastes containing polychlorinated biphenyls (PCB). An oily wastewater, generated by an adjacent facility, was also managed on Deere property.

The pattern shop accumulation area accumulates spent xylene-based solvent used to clean the mold boxes. This waste, the waste mold cleaning solvent (F003, D001), is managed in 55-gallon drums in the Pattern Shop Accumulation Area (SWMU 6), and generated at the rate of approximately 1 drum every 18 months. After accumulation, the drum is moved to the Hazardous Waste Storage Area (SWMU 4) prior to being disposed of off site by Liquid Waste Disposal, Inc. (LWD), of Calvert City, Kentucky; Pollution Control Industries (PCIA) of East Chicago, Indiana; or Environmental Waste Resources (EWR) of Coal City, Illinois. From 1980 to 1985, this waste was managed in the Former Hazardous Waste Storage Area (SWMU 5) prior to off-site disposal. Facility representatives could not provide information on how this waste was handled before 1980.

Waste resin (D001) is generated at the core room when a drum of resin exceeds its shelf life. This waste is generated in irregular quantities and managed in drums in the Hazardous Waste Storage Area (SWMU 4) prior to disposal. From 1980 to 1985, this waste was managed in the Former Hazardous Waste Storage Area (SWMU 5). This waste is then disposed of by LWD, PCIA, or EWR as a D001 hazardous waste. Facility representatives could not provide information on how this waste was handled before 1980. However, the operation which generates the waste was not used until the mid-1970's.

Waste foundry sand (nonhazardous) is generated from the casting operation when foundry sand becomes unusable. The foundry sand is reused as long as feasible, but eventually the particle size distribution becomes too small to use. Waste foundry sand is accumulated in the Foundry Sand Accumulation Area (SWMU 7) in bulk prior to disposal in the landfill (SWMU 1). Waste foundry dust is generated from sand drying and handling operations when dust particles become airborne. The dust is collected in silos that are part of the Air Emissions Control System (SWMU 3). Following testing to ensure that the waste foundry dust is nonhazardous, waste foundry dust is then

mixed in trucks with (nonhazardous) waste foundry sand prior to disposal at the Landfill (SWMU 1). This combined waste may qualify as inert under Illinois regulations and has been determined not to generate leachate when disposed of in the Landfill (SWMU 1) (Beling, 1991). At the time of the Beling report, IEPA was in the process of promulgating regulations to be used to classify foundry sand as inert. This waste, combined with the furnace wastes, is generated at the rate of 50,000 tons per year.

Furnace wastes (nonhazardous) consisting of slag, refractory bricks and mortar, used graphite electrodes, and arc furnace dust, are generated from routine furnace operations and maintenance. These wastes are managed in the Air Emissions Control System (SWMU 3) and the Foundry Sand Accumulation Area (SWMU 7) prior to disposal in the Landfill (SWMU 1). Furnace wastes, combined with the waste foundry sand and dust, are generated at the rate of 50,000 tons per year.

Shop waste oil (nonhazardous) is generated from equipment maintenance. This waste is managed as a special waste in 55-gallon drums in the Hazardous Waste Storage Area (SWMU 4) and was previously managed in the Former Hazardous Waste Storage Area (SWMU 5). The waste oil is generated at the rate of about 250 gallons per month and is hauled by Safety-Kleen Corporation (exact facility not known) for fuel blending and/or recycling.

Waste skim oil is generated from the Oil Skimmer (SWMU 9). The oil skimmer is used to skim oil from basement sumps wastewater prior to discharge to the East Moline POTW. Waste skim oil is generated from SWMU 9 at the rate of approximately 100 gallons per week and is taken in bulk to the John Deere Foundry in Waterloo, Iowa, for reclamation.

Paint wastes are generated from painting operations for maintenance purposes. In the past, this waste was solvent-based and was generated at a maximum rate of 30 tons per year. The facility managed the paint wastes in 55-gallon drums as a F013 waste or D001 waste in the Former Hazardous Waste Storage Area (SWMU 5) (1980 to 1985) or the Hazardous Waste Storage Area (SWMU 4) (since 1985). The facility later switched to a water-based paint, which produced a nonhazardous waste, and reduced the amount of painting to produce less waste. Presently, the facility is not generating any paint waste due to scheduled facility closure in 1993. Facility representatives could not provide information on how this waste was managed before 1980.

Core room air scrubber waste is also generated from the Air Emissions Control System (SWMU 3), where DMEA (a polymer/catalyst used in making the molds) is removed from the air by an acid scrubbing process. This waste is generated at the rate of approximately 100 gallons per week and managed in the Hazardous Waste Storage Area (SWMU 4) in 300-gallon tanks. These tanks, also called totes, are pumped into a tank truck prior to transport for recycling. Previously, this waste was managed in the Former Hazardous Waste Storage Area (SWMU 5) as a D002 hazardous waste in 55-gallon drums. Presently, this waste is managed as a nonhazardous waste; an acid with pH above 2 is now used to eliminate the hazardous classification and is recycled by Heritage Environmental of Indianapolis, Indiana. In the past, this waste was managed as a hazardous waste and transported and disposed of by Peoria Disposal Company at its Peoria, Illinois, facility.

Maintenance operations at the facility generate nonhazardous waste oil absorbent that has absorbed oil or resin. This waste is combined with exothermic sleeve waste (the material used to line the mold boxes and protect them from the heat) from the molds, and is managed in a 20-cubic-yard Dumpster (SWMU 10). This dumpster was not on site at the time of the VSI. These wastes are generated at the rate of approximately 40 cubic yards per year and is hauled by Watts Disposal (of Rock Island, Illinois) to the Upper Rock Island County Landfill for disposal.

Industrial wastewater is generated from operation of the Air Emissions Control System (SWMU 3). This waste is generated at the rate of approximately 25 gallons per minute, and is piped to and treated in the Wastewater Treatment System (SWMU 8) prior to discharge into an unnamed tributary of Sugar Creek under a National Pollutant Discharge Elimination System (NPDES) permit. See Section 3.0 for a description of the wastewater treatment system.

In the past, the facility has generated other wastes. Arc furnace dust (D007) generated between December 1983 and June 1984 was determined to be characteristically hazardous for chromium. This waste was collected in the Air Emissions Control System (SWMU 3) and stored in silos prior to disposal. During this period, 1,122,159 pounds of this waste was transported by Peoria Disposal Company to its landfill in Peoria, Illinois, for disposal. Deere altered their requirements for scrap steel after this period and has not generated hazardous arc furnace dust since.



Waste 1,1,1-trichloroethane (F002) was a one-time generation in 1988 or 1989 from an experimental process to make the core molds. Approximately 100 gallons of this waste were managed in 55-gallon drums in SWMU 4 as a F002 hazardous waste. This waste was transported by Safety-Kleen to its Dolton, Illinois, facility for reclamation. The transformers at the facility which contained PCBs were all removed from the facility. The last of the nine PCB-containing transformers was removed from the site in 1990 by Chemical Waste Management.

There were two Former Oil Skimming Lagoons (SWMU 2) located on site in a portion of what is now the Landfill (SWMU 1). These were never used by Deere, but were used between 1968 and 1978 or 1980 by the Chicago, Rock Island and Pacific Railroad, and successor operators of the locomotive shops located to the south of the facility, to manage an oily wastewater. The outfall from the railroad shop into this unit was sealed with concrete at the property line by Deere sometime between 1978 and 1980. The Former Oil Skimming Lagoons (SWMU 2) were closed (non-RCRA) by Deere in 1981 in accordance with an IEPA-approved closure plan because they were no longer needed.

## **2.4 HISTORY OF DOCUMENTED RELEASES**

This section discusses the history of documented releases to ground water, surface water, air, and on-site soils at the facility.

In December 1990, one of the facility's two underground storage tanks (which contained diesel fuel and gasoline) was determined to have been the source of a release due to overfills. The facility notified the Illinois Emergency Services & Disaster Agency (IESDA) and obtained incident identification number 903799. IESDA subsequently referred the incident to IEPA, Division of Land Pollution Control, LUST Section. The two tanks, both made of fiberglass and 550 gallons in size, were removed, along with 238 cubic yards of gasoline-contaminated soil and landfilled at the Browning-Ferris Industries' Milan, Illinois, facility. The facility is awaiting approval of "clean closure" from IEPA for the area where the USTs were located. The results from the samples of soil and water taken following contaminated soil removal indicate that the remaining soil has levels of benzene and total BTEX (the sum of benzene, toluene, ethyl benzene, and xylene) below IEPA's 1990

LUST cleanup objectives of 16.025 parts per million (ppm) total BTEX and 0.025 ppm benzene (IEPA, 1990a; Deere, 1991).

A release of volatile organic compounds (VOC) believed by Deere and their consultants to be from an adjacent facility, the Former Chrome Locomotive facility, has contaminated ground water on the Deere site. The Beling Consultants Hydrogeological Assessment Report states that The Earth Technology Corporation (TETC) was retained by National Railway of Silvis, Illinois, to determine the vertical and lateral extent of contamination caused by tetrachloroethylene (PCE) and related compounds (Beling, 1991). PCE is one of the organic compounds detected during the Beling assessment; however, the Deere facility representative stated during the VSI that Deere never used PCE at this facility. See Section 4.0 for more details.

## **2.5 REGULATORY HISTORY**

The Deere facility has two EPA ID numbers: ILD 049 389 406 and ILD 075 607 119. The first of these numbers was given by EPA to Deere, by phone, at Deere's request before submittal of the RCRA Part A permit application, and after submittal of the Notification of Hazardous Waste Activity, so as to comply with RCRA manifest regulations. The second was received by mail in November 1980. After Deere discussed the matter with EPA Region 5, EPA decided on November 26, 1980, that ILD 075 607 119 was the correct ID number and would be used henceforth (Deere, 1980d and 1980e).

Deere submitted a Notification of Hazardous Waste Activity form on August 18, 1980 (Deere, 1980a). This form listed two waste codes (F017 and D002) and identified the facility as a generator and a treatment, storage, disposal facility. Deere submitted a RCRA Part A permit application on November 17, 1980 (Deere, 1980c). This application listed one waste code (F017, paint sludge) and one process code, container storage (S01) with a 5,500 gallon capacity, referring to the Former Hazardous Waste Storage Area (SWMU 5). A subsequent Notification of Hazardous Waste Activity form was submitted on December 24, 1990, listing several waste codes (F001, F002, F003, F005, D001, D002, D000) for wastes that had been generated since the original notification was filed (Deere, 1990). No modifications to the Part A permit application were made. On October 5, 1984, Deere requested that its Part A permit application be withdrawn (Deere, 1984). EPA notified Deere



on November 2, 1984, that it had to go through formal RCRA closure. IEPA notified Deere that its closure plan was approved on November 20, 1985 (IEPA, 1985). Deere received a closure certification approval letter from IEPA on May 6, 1986, stating that the Former Hazardous Waste Storage Area (SWMU 5) had been closed in accordance with an approved closure plan. This letter also returned financial assurance documents and stated that the facility was still subject to the requirements of 35 Illinois Administrative Code 722: Standards Applicable to Generators of Hazardous Waste (IEPA, 1986). However, the Part A permit application has not yet been formally withdrawn.

The Deere facility was inspected once for RCRA Interim Status Standards management practices, on March 5, 1981. Several paperwork violations, including lack of a warning sign, insufficient training and maintenance records, and failure to file a contingency plan with local authorities, were found during this inspection (IEPA, 1981). According to the facility representative and the files reviewed during the PA, Deere responded to these violations in a letter (Deere, 1981). There is no record of IEPA's response.

The facility closed/abandoned SWMU 2 in accordance with an IEPA-approved (non-RCRA) closure plan in 1982. This closure/abandonment was performed after a March 31, 1981, IEPA inspection of their landfill noted the presence of the lagoons and IEPA notified Deere of apparent violations of the Illinois Environmental Protection Act. Closure and abandonment activities consisted of removing the liquid and sludge that was in the lagoons for off-site disposal and then filling the lagoons with (nonhazardous) foundry sand in accordance with Deere's landfill permit. Information on the composition and disposition of the sludge and liquid removed from the lagoons could not be obtained through files reviewed during the PA or from interviews with the facility representatives. No record of IEPA formally approving the closure was found in the files available during the PA. Facility representatives did not know if IEPA ever approved closure.

The facility maintains a nonhazardous waste landfill operating permit for the Landfill (SWMU 1). The facility has been the subject of numerous inspections by IEPA related to the operation of the landfill. These inspections were not RCRA inspections. The facility has had some paperwork compliance problems, but has responded successfully to them.

The facility maintains an NPDES permit. The facility has been inspected multiple times for compliance with the NPDES permit. The permit originally included six outfalls. The facility currently has one outfall that discharges to an unnamed tributary of Sugar Creek. Some permit excursions of total suspended solids, color, temperature and phenols were noted in the early 1980s, but have since been resolved by the acquisition of additional equipment and altering the treatment process. Except for two filter bypass events caused by failed equipment (since replaced), the Wastewater Treatment System (SWMU 8) has been in compliance with its NPDES permit since 1988 (IEPA, 1990b).

The facility maintains several air emissions operating permits for the operation of their arc furnaces, holding furnaces, core manufacturing operation, Air Emissions Control System (SWMU 3) and boilers. No compliance problems have been reported.

The facility had two USTs which have been removed and remediated (see Section 2.4). The facility also has an UST that serves as an overflow tank for the Wastewater Treatment System (SWMU 8) and is discussed in Section 3.0.

Deere has been the subject of CERCLA activity. A Notification of Hazardous Waste Site form was filed by Deere on October 6, 1980 (Deere, 1980b). This notification was related to the oil skimming lagoons. A Potential Hazardous Waste Site Preliminary Assessment with reference to the Former Oil Skimming Lagoons (SWMU 2) and the Landfill (SWMU 1) was completed by IEPA on April 17, 1984 (IEPA, 1984). This assessment determined that the site should be inspected on a low priority basis. On March 5, 1985, the facility was inspected by a Field Investigation Team (FIT) from EPA (EPA, 1985a). The purpose of the FIT inspection was to evaluate the Landfill (SWMU 1) and the Former Oil Skimming Lagoons (SWMU 2). Following the FIT inspection, the site was scored using the Hazard Ranking System (HRS) (EPA, 1985b). This draft scoring dealt only with the Landfill and Former Oil Skimming Lagoons. The overall site score was 20.01. No samples or recommendations were made by the FIT and no further action has been taken so far.

## **2.6 ENVIRONMENTAL SETTING**

This section describes the climate; flood plain and surface water; geology and soils; and ground water in the vicinity of the facility.

### **2.6.1 Climate**

The climate in Rock Island County is temperate and continental. The average daily temperature is 50.1 degrees Fahrenheit (°F). The lowest average daily temperature is 22.6°F in January. The highest average daily temperature is 75.6°F in July (Ruffner, 1978).

The total annual precipitation for the county is 32.79 inches. The mean annual lake evaporation for the area is about 32 inches (USDC, 1968). The 1-year, 24-hour maximum rainfall is about 2.5 inches (USDC, 1963).

The prevailing wind is from the west-northwest. Average wind speed is highest in April at 12.2 miles per hour (Ruffner, 1978).

### **2.6.2 Flood Plain and Surface Water**

The Deere facility is located in an unzoned area protected from a 100-year flood by the Mississippi River levee system (FEMA, 1982).

The nearest surface water body is an on-site retention/cooling pond and adjacent marsh and wetland, located at the eastern portion of the facility. Surface water runoff from the facility is to the pond and marsh, and then to an unnamed tributary discharging to Sugar Creek. Sugar Creek is located adjacent to the facility and is used for drainage and recreational purposes. Sugar Creek discharges to the Mississippi River greater than 3 stream miles (the distance the stream flows) from the facility (EPA, 1985b). The Mississippi River, which flows southwesterly at this point, is located approximately 1 mile northwest of the facility and 1.75 miles west of the facility.



### **2.6.3 Geology and Soils**

Site-specific information is available for a portion of the facility and is presented here. The facility's building and parking lot is located on cut and fill land (USDA, 1977). The eastern portion of the facility, the Landfill (SWMU 1), and the cooling/retention pond are located on two types of soil. The soils that the pond is located on are classified as marsh. The landfill is typically 4 feet deep, but is as deep as 10 feet in places. As part of a hydrogeological assessment of the landfill, two leachate wells were installed at depths of 8 and 6.75 feet, and failed to yield any leachate (Beling, 1991). This same report indicates that the facility is underlain by clay with a permeability of  $1.41 \times 10^{-7}$  centimeters per second. This clay ranges from 1 to 18 feet in thickness across the site. This clay layer is part of the Cahokia Alluvium and is underlain by glacial deposits belonging to the Henry Formation. The Cahokia Alluvium beneath the facility is approximately 20 feet thick and consisting of silt, clay, and silty sand. The Henry Formation, consisting of glacial outwash sand and gravel with occasional thin beds of silt, is 10 to 30 feet thick at the site (Beling, 1991).

The glacial deposits are underlain by Pennsylvanian shale at depths of 28 to 45 feet. The thickness of the Pennsylvanian shale ranges from 10 feet to 127 feet in the general vicinity of the facility. Fractured limestone deposits of Silurian and Devonian age underlie the Pennsylvanian rocks. The thickness of the limestone is approximately 310 feet in the vicinity of the facility. Ordovician dolomite underlies the Silurian rocks and extends to depths of approximately 1,580 feet (Beling, 1991).

### **2.6.4 Ground Water**

Three aquifers are used in the vicinity of the facility. The shallow aquifer in the glacial deposits is not used for drinking water and it is not known if it is used for any other purposes (Beling, 1991). This aquifer occurs at a depth of approximately 8 feet in sand and gravel beneath the clay layers. Drinking water wells in the area are completed in the Silurian limestone, at depths from 100 to 200 feet, or the Ordovician aquifer, at depths in excess of 1,000 feet. Most drinking water in the area comes from the Mississippi River and the rest comes from ground water. Two water wells located on site are 1,640 and 1,653 feet in depth. Both are used as a source of industrial water; neither is used for drinking water (Beling, 1991). It is not known if these wells are located



upgradient or downgradient from the former Chrome Locomotive site in the formation accessed by these wells.

The shallow aquifer, located in the glacial material, is known to be contaminated with volatile organics. The source of the contamination is believed by Deere and their consultants to be from an adjacent facility located upgradient of the Deere property. See Section 4.0 for more information.

## **2.7 RECEPTORS**

The Deere facility occupies 147 acres in a industrial and residential area on the border between East Moline and Silvis, Illinois. East Moline has a population of about 20,900 people and Silvis has a population of about 7,100 people.

The Deere facility is bordered on the north by residences and industry, on the west by residences, on the south by a railroad locomotive shop, and on the east by industrial facilities. The nearest school, East Moline High School, is located about 0.25 mile southwest of the facility. Facility access is controlled by an 8-foot-high fence topped with barbed wire. The facility uses closed circuit cameras to monitor entrances, and is patrolled 24 hours per day.

The nearest surface water body is an on-site retention/cooling pond and adjacent marsh, located at the eastern portion of the facility. The discharge from the pond is to an unnamed stream that flows north to Sugar Creek, which is used for drainage and recreational purposes. Sugar Creek, located 0.5 mile north of the facility, discharges into the Mississippi River, located approximately 1 mile northwest of the facility. The Mississippi River is located more than 3 stream miles from the facility.

Ground water is used for drinking water and a industrial supply source within 3 miles of the facility. The nearest drinking water well is located approximately 400 feet south of the facility. This well is 405 feet deep and is set in dolomite (Beling, 1991). It is not known if the well is located upgradient or downgradient from the Deere facility in the formation accessed by this well. No drinking water wells within 1 mile of the site draw water from the glacial overburden materials. All drinking water wells draw water from the middle (100 to 400 feet) or deep (over 1,000 feet) aquifers.

It is not known if the glacial overburden material is used as a drinking water source within 3 miles of the facility.

Sensitive environments are located on site. The retention/cooling pond is classified as a palustrine, unconsolidated bottom, intermittently exposed, excavated wetland, and is approximately 3 acres in size. There are over 20 other wetlands of varying classifications and areas, ranging from less than 1 acre to greater than 20 acres, within 2 miles of the facility (USDI, 1988).

### 3.0 SOLID WASTE MANAGEMENT UNITS

This section describes the 10 SWMUs identified during the PA/VSI. The following information is presented for each SWMU: description of the unit, dates of operation, wastes managed, release controls, history of documented releases, and RAI's observations. Figures 2 and 3 show the SWMU locations.

#### **SWMU 1**

#### **Landfill**

**Unit Description:** This unit is approximately 80 acres in size and is located on the eastern portion of the site. This unit varies in depth from 1 to 10 feet. The landfill is not artificially lined, but is built on natural low permeability clay soils 2 to 4 feet thick.

**Date of Startup:** This unit began operation in 1968.

**Date of Closure:** This unit is active, but a portion of the landfill is undergoing non-RCRA closure. The facility plans to have this unit fully closed to applicable IEPA landfill standards by late 1993 or early 1994, following facility closure.

**Wastes Managed:** This unit is the disposal area for foundry sand and dust mixture (consisting of silica sand, western bentonite, and seconal), furnace wastes (arc furnace dust, slag, refractory bricks and mortar, used graphite electrodes), and foundry sand from wastewater treatment, which consists primarily of the foundry sand and dust mixture. All of these wastes are nonhazardous (arc furnace dust generated between December 1983 and June 1984 was determined to be hazardous and was not disposed of in the landfill). The Beling hydrogeologic report stated that the wastes managed in this unit may qualify for inert status under Illinois Administrative Code (Beling, 1991).

Release Controls: The landfill is situated on a natural clay layer and is operating under a current IEPA permit.

History of Documented Releases: No releases from this unit have been documented. In 1991, a hydrogeologic investigation was completed for the landfill and concluded that the landfill does not generate any leachate.

Observations: Approximately three-quarters of the landfill was covered with vegetation. Ongoing closure activities were observed at the western half of the landfill. Several monitoring wells are present (see Photographs No. 1 and 2). They are required by IEPA for landfill operations and for landfill closure. RAI noted no visual evidence of release.

## **SWMU 2**

### **Former Oil Skimming Lagoons**

Unit Description: The size, construction, history, and exact location of these lagoons is unknown. The waste managed in these lagoons was not generated by Deere. The lagoons were either present when Deere acquired the facility from the Chicago, Rock Island & Pacific Railroad in 1968, or were constructed shortly afterwards in response to oily wastewater being released onto Deere property.

Date of Startup: This unit began operation about 1968.

Date of Closure: This unit was rendered inactive between 1978 and 1980, and was non-RCRA closed/abandoned in 1981.

Wastes Managed: This unit was used to skim oil from water that was discharged from the adjacent railroad shop. During closure, this unit was filled with nonhazardous foundry sand and dust after all the liquid was pumped



out. Closure activities were conducted in accordance with an IEPA-approved closure plan. This unit is currently occupied by part of the Landfill (SWMU 1).

Release Controls: It is not known what release controls this unit had.

History of Documented Releases: No releases from this unit have been documented. However, the lagoons were the subject of a FIT inspection and HRS scoring. No releases were observed during the FIT inspection.

Observations: The lagoons have been filled with foundry sand, and their exact location is hard to determine. Some minor ponding of rainwater was evident in the approximate vicinity of the lagoons. RAI noted no evidence of release (see Photograph No. 2).

### **SWMU 3**

#### **Air Emissions Control System**

Unit Description: The Air Emissions Control System is used to collect the dusts generated during all facility operations. The unit also collects DMEA from the core room. The Air Emissions Control System consists of a baghouse at the southeast corner of the facility, an air scrubber in the core room, and a water spray system, located inside the building, near the middle of the east end. Dust from the baghouse is collected in steel silos located adjacent to the baghouse prior to disposal at the landfill (SWMU 1). Wastewater from the air scrubber and water spray system is treated in the Wastewater Treatment System (SWMU 8).

Date of Startup: This unit began operation in 1968.

Date of Closure: This unit is active.



waste oil, core room air scrubber waste, paint waste. Formerly, the unit managed 1,1,1-trichloroethane (no longer generated).

Release Controls: The floor is epoxy sealed and the area is curbed. The unit is located indoors.

History of Documented Releases: No releases from this unit have been documented.

Observations: Several drums of hazardous and nonhazardous waste were present. There were also several 300-gallon totes of core room air scrubber waste waiting for off-site recycling. RAI noted no evidence of release (see Photograph No. 4).

#### **SWMU 5**

#### **Former Hazardous Waste Storage Area**

Unit Description: This unit was used as the hazardous waste storage area until 1985, when the unit was RCRA-closed. The unit is located in a portion of a former railroad car dock, depressed about 4 feet below floor level, in the northeast corner of the facility. This unit was approximately 10 feet wide and 60 feet long, and had a concrete floor.

Date of Startup: This unit began operation in 1980.

Date of Closure: This unit is inactive and was RCRA-closed and filled with gravel and concrete in 1985.

Wastes Managed: This unit managed waste mold cleaning solvent (D001, F003), waste resin (D001), paint waste (D001, F003) and shop waste oil in drums and core room air scrubber waste in totes.

Release Controls:	This unit was located in a depressed railroad car dock, which has since been filled to floor level. It is not known if the floor was sloped.
History of Documented Releases:	No releases from this unit have been documented.
Observations:	The rail siding where this unit was located has been filled with sand and concrete so that it is now flush with floor level. RAI noted no evidence of release (see Photograph No. 5).
<b>SWMU 6</b>	<b>Pattern Shop Accumulation Area</b>
Unit Description:	This unit consists of a single 55-gallon steel drum which is used to accumulate the waste solvent used in the pattern shop in the west-central part of the facility. This unit is located in a flammable materials storage room on an epoxy sealed concrete floor at least 8-inches thick. No floor drains are located in the vicinity of this unit.
Date of Startup:	This unit began operation in 1968.
Date of Closure:	This unit is active.
Wastes Managed:	This unit accumulates waste mold cleaning solvent (D001, F003) used to clean the molds in the pattern shop.
Release Controls:	The unit is located inside a room that also contains flammable materials (product), on an epoxy sealed concrete floor.
History of Documented Releases:	No releases from this unit have been documented.



Observations: There are no floor drains in this room. RAI noted no evidence of release (see Photograph No. 6).

**SWMU 7 Foundry Sand Accumulation Area**

Unit Description: The Foundry Sand Accumulation Area is located outdoors, and is where the waste foundry sand and dust is stockpiled prior to being landfilled. This area measures approximately 30 feet by 10 feet. The waste foundry sand and dust is typically removed from here every day. The pile is uncovered, and is located directly on the ground at the rear of the facility, toward the north end.

Date of Startup: This unit began operation in 1968.

Date of Closure: This unit is active.

Wastes Managed: This unit manages nonhazardous furnace wastes prior to disposal in the landfill.

Release Controls: This unit has no release controls. However, the waste managed is sufficiently dense that it is not easily dispersed by wind gusts, and may qualify for inert status under Illinois Administrative Code (Beling, 1991).

History of Documented Releases: No releases from this unit have been documented.

Observations: A pile of foundry sand and dust was present during the VSI. RAI noted no other evidence of release (see Photograph No. 7).

## **SWMU 8**

## **Wastewater Treatment System**

Unit Description:	<p>The Wastewater Treatment System is located inside the east-central portion of the building. This unit is used to treat the wastewaters generated by the facility from the dust collection system. It consists of dual carbon filters, dual multi-media filters, and one clarifier and one thickening tank used to settle out the particulates from the industrial wastewater, all of epoxy lined, steel construction. This unit also includes a 10,000-gallon below ground, concrete sump pit (separate from the basement sumps) located adjacent to the Wastewater Treatment System and a 100,000-gallon aboveground temporary storage tank (used only when the system is shut down for maintenance). Phenols, generated from the burn-off of the resin used in the core molds when the molten iron is poured, are removed by a combination of potassium permanganate and the carbon filters. This industrial wastewater is then combined with the wastewater from the other dust collectors and is treated in the clarifier and thickening tanks to remove foundry sand and dust. The unit treats approximately 25 gallons per minute of industrial wastewater. The foundry sand and dust is disposed of at the on-site Landfill (SWMU 1). Treated wastewater is discharged under a NPDES permit through an outfall to an unnamed tributary of Sugar Creek.</p>
Date of Startup:	<p>This unit began operation in 1968.</p>
Date of Closure:	<p>This unit is active.</p>
Wastes Managed:	<p>This unit manages nonhazardous industrial wastewater from the dust collectors and grinding operations.</p>
Release Controls:	<p>The unit serves as a release control, preventing water pollution. A 10,000-gallon below ground, open top, emergency overflow tank is</p>

available to handle overflows of the treatment system. The system is located inside the facility.

History of  
Documented Releases:

Several excursions from NPDES permit limits were documented during the early 1980s for the NPDES outfalls of this unit. These excursions include the following parameters: phenols, total suspended solids, oil and grease, zinc, iron, copper, and lead. Certain modifications were made to the wastewater treatment unit since then and the facility has been in compliance with its permit since 1988. The unit typically discharges approximately 25 gallons per minute. The facility's NPDES permit sets several levels of allowable discharges, dependent on production rates.

Observations:

The unit was in operation during the time of the VSI. RAI noted no evidence of unpermitted release (see Photograph No. 8).

**SWMU 9**

**Oil Skimmer**

Unit Description:

The Oil Skimmer is located at the north end of the facility, and is used to remove oil from water collected from the facility's sumps and floor drains. The unit consists of an epoxy-lined concrete skimming/settling tank and an epoxy-lined concrete oil accumulation tank.

Date of Startup:

This unit began operation in 1968.

Date of Closure:

This unit is active.

Wastes Managed:

This unit manages wastewater from the facility's basement sumps, prior to discharge to the East Moline POTW. The oil is taken by truck to the John Deere Foundry in Waterloo, Iowa.

Release Controls: No secondary containment is available for this unit; however, the wastewater is more than 12 inches below the top of the unit.

History of Documented Releases: No releases from this unit have been documented. This unit operates under an East Moline sewer discharge permit.

Observations: This unit was in operation. RAI noted no evidence of release (see Photograph No. 9).

#### **SWMU 10**

#### **Dumpster**

Unit Description: This unit consists of a 20-cubic-yard steel dumpster located outdoors, adjacent to SWMU 7. This unit was not on site during the VSI, having been removed from the facility for disposal of its contents.

Date of Startup: This unit began operation in 1968.

Date of Closure: This unit is active.

Wastes Managed: This unit manages nonhazardous used oil absorbent and exothermic sleeve waste.

Release Controls: This unit does not have any secondary containment.

History of Documented Releases: No releases from this unit have been documented.

Observations: This unit was not present during the VSI, as it had been hauled off for disposal. RAI noted no evidence of release (see Photograph No. 7).



#### 4.0 AREAS OF CONCERN

RAI identified one AOC during the PA/VSI. This AOC is discussed below and its probable source is shown in Figure 2.

##### AOC 1      Ground Water Contamination Area

The ground water contamination is in the uppermost aquifer, located beneath the site. This aquifer is located beneath the natural 3- to 5-foot clay layer that the Landfill is built on. Deere detected the ground water contamination in on-site monitoring wells in 1990. Twelve monitoring wells were installed in 1990, and 6 more in 1991 under an agreement with IEPA. Only eight of these monitoring wells are still in use, the others having been closed with IEPA consent. The following is a list of contaminants found in the uppermost aquifer, along with their respective maximum concentrations from 1990 sampling (in milligrams per liter (mg/L)): tetrachloroethylene (0.148); trichloroethene (0.09); benzene (0.007); 1,2-dichloroethene (0.171); vinyl chloride (0.04); chlorobenzene (0.756); methylene chloride (0.19); 2-butanone (0.02); chloroform (0.01); ethylbenzene (0.015); and xylene (0.01) (Beling, 1991).

An evaluation of the former Chrome Locomotive site, located south (upgradient in the shallow aquifer) of the Deere facility, was prepared by The Earth Technology Corporation in 1991. The findings from this report, cited in the Beling Hydrogeologic Investigation, found maximum contaminant concentrations at the former Chrome Locomotive site as follows: tetrachloroethylene (23,000 mg/L); trichloroethylene (600 mg/L); chlorobenzene (6 mg/L) and trans-1,2-dichloroethene (7 mg/L) (Beling, 1991). The hydrogeological assessment report determined that the water quality leaving the Deere property (downgradient) is better than the water quality entering the Deere property (upgradient) (Beling, 1991). A water well, presently an industrial water source but previously a drinking water source, exists at the Former Chrome Locomotive site. In a letter to Chrome Locomotive, dated July 5, 1990, the Illinois Department Public Health included results from water quality testing performed on water from this well and tap water. The results indicated the

presence of tetrachloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, trichloroethylene and vinyl chloride.

Deere signed an agreement with IEPA involving a new operating permit for the Landfill (SWMU 1) and was placed on the Deferred State Remedial Action Priority List (DSRAPL). As part of the agreement, Deere installed 18 monitoring wells, from 16 to 40 feet deep, and two leachate wells to study the hydrogeology of the landfill. Both leachate wells were found to be dry, leading Beling Consultants to conclude that the Deere landfill does not generate leachate. Analytical results for ground water samples collected from the monitoring wells indicate that the ground water contamination is found at depths of 15 feet and greater. The results also indicate that ground water contamination is greater at the south edge of the Deere landfill (upgradient) than it is at the north edge (downgradient).

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## 5.0 CONCLUSIONS AND RECOMMENDATIONS

The PA/VSI identified 10 SWMUs and one AOC at the John Deere facility. Background information on the facility's location; operations; waste generation and management; history of documented releases; regulatory history; environmental setting; and receptors is presented in Section 2.0. SWMU-specific information, such as the unit's description, dates of operation, wastes managed, release controls, history of documented releases, and observed condition, is presented in Section 3.0. AOCs are discussed in Section 4.0. Following are RAI's conclusions and recommendations for each SWMU and AOC. Table 3, at the end of this section, summarizes the SWMUs and AOC at the facility and the recommended further actions.

### **SWMU 1**

#### **Landfill**

Conclusions: The landfill is located at the eastern portion of the facility. Part of this unit is undergoing closure. The entire unit should be closed by the end of 1993 or early in 1994. The potential for release to on-site soils, surface water, ground water, and air from this unit is low, as the landfill generates no leachate, and the material landfilled may qualify as inert under Illinois regulations. Under Illinois regulations, Deere is required to regularly sample ground water and inspect and maintain the landfill, even after it is closed.

Recommendations: RAI recommends that ground water monitoring and landfill maintenance continue per IEPA requirements for landfill operation and closure.

### **SWMU 2**

#### **Former Oil Skimming Lagoons**

Conclusions: This unit was closed in 1981, and was the subject of a FIT inspection which determined that the unit did not pose a significant threat to the environment or human health. The potential for release to on-site soils, ground water, surface water, and air is low from this unit, due to its having been closed in accordance with an approved closure plan, filled with foundry sand and dust,

and based on the conclusions of the FIT inspection. Some minor ponding of rainwater was present during the VSI.

Recommendations: RAI recommends no further action for this unit at this time.

**SWMU 3 Air Emissions Control System**

Conclusions: This unit manages the foundry sand and dust generated during facility operations. This unit also manages DMEA from the core room. The unit has not had any compliance problems. The potential for release to on-site soils, surface water, ground water, and air is low, due to the materials managed and the indoor location for part of the unit. The unit operates under an IEPA air emissions permit.

Recommendations: RAI recommends no further action for this unit at this time.

**SWMU 4 Hazardous Waste Storage Area**

Conclusions: The Hazardous Waste Storage Area is used to store all the facility's hazardous wastes for less than 90 days. The potential for release to on-site soils, ground water, surface water, and air is low due to this unit's indoor location and secondary containment by a curbed, epoxy-sealed concrete floor.

Recommendations: RAI recommends no further action for this unit at this time.

**SWMU 5 Former Hazardous Waste Storage Area**

Conclusions: This unit was RCRA-closed in 1985, and has not been used since. This unit presents no potential for release to on-site soils, surface water, ground water, or air. In the past, this unit had a low potential for release due to its indoor location on a concrete floor. Wastes were managed in 55-gallon steel drums.



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Recommendations: RAI recommends no further action for this unit at this time.

**SWMU 6                      Pattern Shop Accumulation Area**

Conclusions: This unit is used to accumulate wastes in a 55-gallon drum generated in the pattern shop during cleaning of the molds. The unit presents a low potential for release to on-site soils, ground water, surface water, and air due to its indoor location on a concrete floor.

Recommendations: RAI recommends no further action for this unit at this time.

**SWMU 7                      Foundry Sand Accumulation Area**

Conclusions: This unit is used to accumulate foundry sand prior to disposal in the Landfill (SWMU 1). This unit presents a low potential for release to on-site soils, ground water, surface water, or air due to the nature of the waste managed. The foundry sand may qualify as on inert material under Illinois regulations and generate no leachate.

Recommendations: RAI recommends no further action for this unit at this time.

**SWMU 8                      Wastewater Treatment System**

Conclusions: This unit treats industrial wastewater generated from facility operations. There have been some past compliance problems, but none since 1988. Additional treatment equipment, primarily activated carbon units and multi-media filters, were added. This unit discharges to surface water under an NPDES permit. This unit presents a low potential for release to ground water, on-site soils, and air due to its indoor location on a concrete floor. This unit has a below ground, concrete sump pit to handle overflows from the treatment system.

Recommendations: RAI recommends no further action for this unit at this time.

**SWMU 9 Oil Skimmer**

Conclusions: This unit manages basement sump wastewaters generated at the facility prior to permitted discharge to the East Moline POTW. This unit presents a low potential for release to ground water, on-site soils, and air due to unit's water being more than 12 inches below the top of the unit, being inspected by Deere once quarterly, and the nonvolatile nature of the wastes managed.

Recommendations: RAI recommends no further action for this unit at this time.

**SWMU 10 Dumpster**

Conclusions: This unit manages nonhazardous oil absorbent from maintenance operations and exothermic sleeve waste from the molds in a 20-cubic yard dumpster. The potential for release to on-site soils, surface water, ground water, and air is low due to the nature of the wastes.

Recommendations: RAI recommends no further action for this unit at this time.

**AOC 1 Ground Water Contamination Area**

Conclusions: There is documented ground water contamination of the Deere site. It is believed to come from the former Chrome Locomotive facility located immediately south of the John Deere facility. The full extent of the ground water contamination has not been determined. IEPA is aware of the contamination. The probability of soil contamination is high due to the ground water contamination. The potential for release to surface water or air from the Deere facility is low due to the contamination being located below a clay layer of low permeability.

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Recommendations: RAI recommends the contamination be further evaluated and that remediation be performed if deemed necessary.

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TABLE 3  
SWMU AND AOC SUMMARY

<u>SWMU</u>	<u>Dates of Operation</u>	<u>Evidence of Release</u>	<u>Recommended Further Action</u>
1. Landfill	1968 to present	None	Continue ground water monitoring as required by IEPA
2. Former Oil Skimming Lagoons	before 1968 to 1981	None	No further action at this time
3. Air Emissions Control System	1968 to present	None	No further action at this time
4. Hazardous Waste Storage Area	1985 to present	None	No further action at this time
5. Former Hazardous Waste Storage Area	1980 to 1985	None	No further action at this time
6. Pattern Shop Accumulation Area	1968 to present	None	No further action at this time
7. Foundry Sand Accumulation Area	1968 to present	None	No further action at this time
8. Wastewater Treatment System	1968 to present	Some past NPDES compliance problems, none since 1988	No further action at this time
9. Oil Skimmer	1968 to present	None	No further action at this time
10. Dumpster	1968 to present	None	No further action at this time

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TABLE 3 (continued)

SWMU AND AOC SUMMARY

<u>AOC</u>	<u>Dates of Operation</u>	<u>Evidence of Release</u>	<u>Recommended Further Action</u>
1. Ground Water Contamination Area	Contamination was detected in 1990 and may have been detected earlier.	Documented ground water contamination, believed to be coming from an adjacent facility.	Evaluate the contamination further and remediate if necessary.

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## REFERENCES

- Beling Consultants (Beling), 1991. Hydrogeological Assessment Report, John Deere Foundry Landfill Site, Route 84 and 14th Avenue, East Moline, Illinois, July.
- John Deere Foundry (Deere), 1980a. Notification of Hazardous Waste Activity, August 18.
- Deere, 1980b. Notification of Hazardous Waste Site form, October 6.
- Deere, 1980c. RCRA Part A permit application, November 17.
- Deere, 1980d. Letter to U.S. Environmental Protection Agency (EPA) requesting a Hazardous Waste ID number, November 6.
- Deere, 1980e. Letter to U.S. Environmental Protection Agency (EPA) regarding multiple ID numbers, November 26.
- Deere, 1981. Letter to Illinois Environmental Protection Agency (IEPA) responding to July 2, 1981 Notice of Violation, July 30.
- Deere, 1984. Letter to IEPA requesting withdrawal of RCRA Part A permit application, October 5.
- Deere, 1990. Revised Notification of Hazardous Waste Activity, December 24.
- Deere, 1991. Remediation and Closure Report, prepared by Enviromark, received by IEPA July 5.
- Deere, 1992. Facility diagram provided during VSI.
- EPA, 1985a. Field Inspection Team (FIT), Potential Hazardous Waste Site Inspection Report - Draft, March 5.
- EPA, 1985b. Hazardous Ranking System (HRS) Scoring, July 24.
- Federal Emergency Management Agency (FEMA), 1982. Flood Insurance Study, City of East Moline, Illinois.
- IEPA, 1981. RCRA Interim Status Standards Inspection, March 5.
- IEPA, 1984. Potential Hazardous Waste Site Preliminary Assessment, April 17.
- IEPA, 1985. Letter to Deere approving closure plan, November 20.
- IEPA, 1986. Closure Certification Approval Letter to Deere, May 6.
- IEPA, 1990a. Guidance Manual for Petroleum-Related LUST Cleanups in Illinois. IESDA, Division of Flood Pollution Control, May.

IEPA, 1990b. Memorandum regarding NPDES (National Pollutant Discharge Elimination System) CSI and Biomonitoring, October 22.

Ruffner, James A., 1978. Climates of the States. Notes Data Corporation, Detroit Michigan.

U.S. Department of Agriculture (USDA), 1977. Soil Survey of Rock Island County, Illinois.

United States Department of Commerce (USDC), 1963. Rainfall Frequency Atlas of the United States. U.S. Government printing office, Washington, D.C.

USDC, 1968. Climatic Atlas of the United States. U.S. Government Printing Office, Washington, D.C.

U.S. Department of the Interior (USDI), 1988. National Wetlands Inventory Map for Silvis Quadrangle, Illinois.

U.S. Geological Survey, 1975. Topographic Map for Silver Quadrangle, Iowa-Illinois.



**ATTACHMENT A**  
**EPA PRELIMINARY ASSESSMENT FORM 2070-12**





POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE IL	02 SITE NUMBER ILD 075 607 119
----------------	-----------------------------------

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)  
John Deere Foundry

02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER  
Highway 84 at 14th Avenue

03 CITY  
East Moline

04 STATE IL	05 ZIP CODE 61244	06 COUNTY Rock Island	07 COUNTY CODE	08 CONG DIST
----------------	----------------------	--------------------------	-------------------	-----------------

09 COORDINATES: LATITUDE LONGITUDE  
41° 31' 23" N | 090° 25' 18" W

10 DIRECTIONS TO SITE (Starting from nearest public road)

From Illinois Route 5 take 1st Ave. (Highway 84). Take 1st Avenue west to 19th Street. Take 19th Street north (still Highway 84) to facility entrance.

III. RESPONSIBLE PARTIES

01 OWNER (if known)  
Deere & Company

02 STREET (Business, mailing residential)  
John Deere Road

03 CITY  
Moline

04 STATE IL	05 ZIP CODE 61265	06 TELEPHONE NUMBER (309) 752-5435
----------------	----------------------	---------------------------------------

07 OPERATOR (if known and different from owner)  
Same

08 STREET (Business, mailing, residential)

09 CITY

10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
----------	-------------	---------------------

13 TYPE OF OWNERSHIP (Check one)

- ☒ A. PRIVATE    ☐ B. FEDERAL: \_\_\_\_\_    ☐ C. STATE    ☐ D. COUNTY    ☐ E. MUNICIPAL  
(Agency name)
- ☐ F. OTHER \_\_\_\_\_    ☐ G. UNKNOWN  
(Specify)

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)

- ☒ A. RCRA 3010 DATE RECEIVED: 08 / 18 / 80    ☒ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: 10 / 09 / 81    ☐ C. NONE  
MONTH DAY YEAR    MONTH DAY YEAR

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION

BY (Check all that apply)

- ☒ YES    DATE 09 / 01 / 92    ☐ A. EPA    ☒ B. EPA CONTRACTOR    ☐ C. STATE    ☐ D. OTHER CONTRACTOR  
☐ NO    ☐ E. LOCAL HEALTH OFFICIAL    ☐ F. OTHER: \_\_\_\_\_  
(Specify)

CONTRACTOR NAME(S): Resource Applications, Inc.

02 SITE STATUS (Check one)

- ☒ A. ACTIVE    ☐ B. INACTIVE    ☐ C. UNKNOWN

03 YEARS OF OPERATION

1968 | Present    ☐ UNKNOWN  
BEGINNING YEAR    ENDING YEAR

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

Foundry sand and dust (silica, seacoal, bentonite), steel, gasoline, diesel fuel, solvents, paints, potassium permanganate, oils, phenol, iron, resin, DMEA, furnace slag oil absorbent.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

There is known ground water contamination on site, believed to be from an adjacent facility. A low potential exists from foundry operations, and landfill contents may meet the Illinois definition of "inert waste."

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents.)

- ☐ A. HIGH    ☐ B. MEDIUM    ☒ C. LOW    ☐ D. NONE  
(Inspection required promptly)    (Inspection required)    (Inspect on time-available basis)    (No further action needed; complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT

Kevin Pierard

02 OF (Agency/Organization)

EPA Region 5

03 TELEPHONE  
NUMBER  
(312) 886-4448

04 PERSON RESPONSIBLE FOR ASSESSMENT

William Earle

05 AGENCY

06 ORGANIZATION

Resource Applications, Inc.

07 TELEPHONE NUMBER

(312) 332-2230

08 DATE  
10 / 27 / 92  
MONTH DAY YEAR



**ATTACHMENT B**  
**VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS**

## VISUAL SITE INSPECTION SUMMARY

John Deere Foundry  
Highway 84 and 14th Avenue  
East Moline (Silvis), Illinois  
ILD 075 607 119

Date: September 1, 1992

Primary Facility Representative: Tom Schwake, Environmental Engineer  
Representative Telephone No.: (309) 765-2251  
Additional Facility Representatives: Dennis C. Diehl, Manager, Plant & Industrial Engineering

Inspection Team: William Earle, Resource Applications, Inc. (RAI)  
Laura Czajkowski, RAI

Photographer: Laura Czajkowski

Weather Conditions: Partly cloudy, temperature about 76°F

Summary of Activities: The visual site inspection (VSI) began at 10:00 a.m. with an introductory meeting. The inspection team explained the purpose of the VSI and the agenda for the visit. Facility representatives then discussed the facility's past and current operations, solid wastes generated, and release history. Facility representatives provided the inspection team with copies of requested documents.

The VSI tour began at 12:45 p.m. Photographs of all SWMUs or former locations of SWMUs were taken. The tour included an overview of facility operations.

The tour concluded at 2:35 p.m., after which the inspection team held an exit meeting with facility representatives. The VSI was completed and the inspection team left the facility at 3:30 p.m.





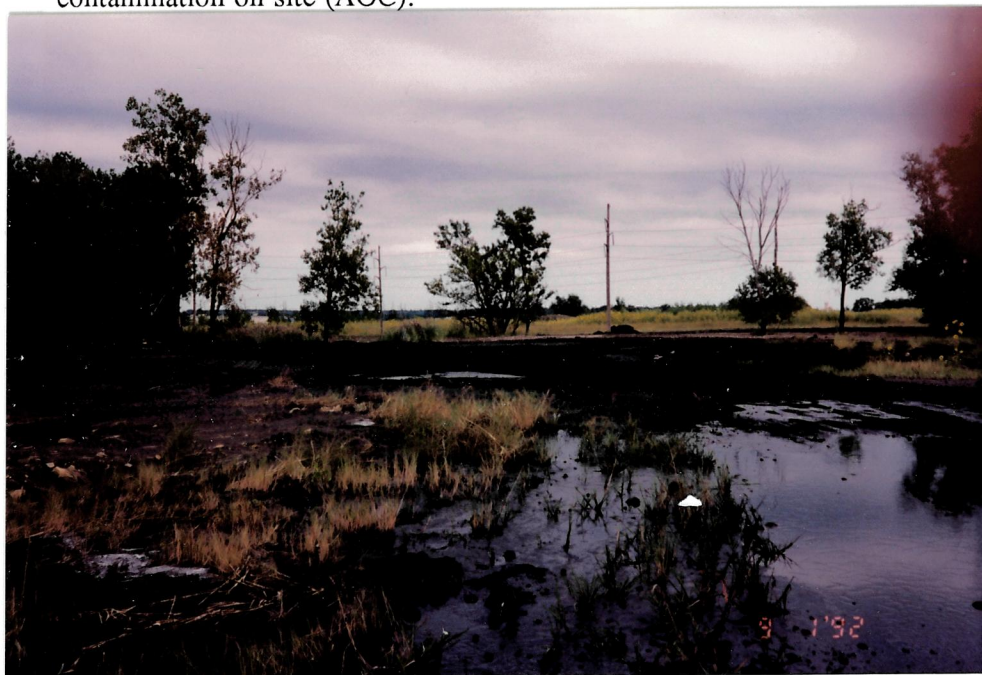
Photograph No. 1

Location: SWMU 1, AOC 1

Orientation: Southeast

Date: 9/1/92

Description: This photograph shows the portion of the landfill that is being covered with topsoil for closure. Note a monitoring well between the two yellow guard posts. The facility in the background of the picture is believed to be the source of the ground water contamination on site (AOC).



Photograph No. 2

Location: SWMU 2

Orientation: Northeast

Date: 9/1/92

Description: This is the approximate location of SWMU 2. This also part of the Landfill (SWMU 1).





Photograph No. 3

Orientation: South

Location: SWMU 3

Date: 9/1/92

Description: This is the baghouse, part of the Air Emissions Control System at the facility.



Photograph No. 4

Orientation: East

Description: This is a photograph of the Hazardous Waste Storage Area (SWMU 4).

Location: SWMU 4

Date: 9/1/92



Photograph No. 5

Location: SWMU 5

Orientation: Northeast

Date: 9/1/92

Description: This is the location of SWMU 5, the Former Hazardous Waste Storage Area.



Photograph No. 6

Orientation: East

Description: This is the location of SWMU 6, the Pattern Shop Accumulation Area and is used to accumulate waste mold cleaning solvent.

Location: SWMU 6

Date: 9/1/92





Photograph No. 7  
Orientation: North

Location: SWMU 7, 10  
Date: 9/1/92

Description: This pile is foundry sand waiting to be hauled to the Landfill (SWMU 1). The Dumpster (SWMU 10) is normally located adjacent to this pile.



Photograph No. 8  
Orientation: West

Location: SWMU 8  
Date: 9/1/92

Description: This equipment is the facility's Wastewater Treatment System.



Photograph No. 9  
Orientation: West  
Description: This is the Oil Skimmer (SWMU 9).

Location: SWMU 9  
Date: 9/1/92



**ATTACHMENT C**  
**VISUAL SITE INSPECTION FIELD NOTES**



John Deere F4000

9/1/02

March 1975 5. Kurt Down of Production  
By September 03 must change schedule for  
for economics

Silver Sand  
Western Bank  
used in small water  
Seal & concrete  
Receptor 57 line

Scrap soil  
Dust collector

Water tank / filter  
to m-airt handling

Sealed pit, dirt, non-paved

must not contain asbestos  
Best place within 500 ft - long

on site / landfill etc  
Also active aluminum (pH) / outside

to concrete  
Refractory brick walls, new that

Also clay to landfill  
carbon (from extraction)

add layer of carbon to change

new system (pilot) for future 'small' quantity



Pattern sleep - again symptomatic from GMS

more and more restlessness with weaning from bottle even here

1/11-12/11 - still in an experimental situation (3 months ~ 100g gain)

1/12/11 - just with from previous period  
continuity of training/pattern  
looking - interesting

Q1 1/12/11 - with interesting pattern  
in response to T.EDA  
Subject

Controlled Water

from Air reculture (used) to control the  
colony and system, it was dropped  
off site for recycling @ 11/17/11

Some of the Air-Dust from biological system  
the rest (the dust 2 yrs) PDC (P. *provincialis*)  
transmitted to P. *provincialis* - 1/17/11  
←

Dear

Oil Leases

would be covered by C-1 & P-2

use of oil lease

covered by oil lease

covered by oil lease

covered by oil lease

covered by oil lease

covered by oil lease

covered by oil lease

WITP

with respect to oil collection

from oil collection

oil collection with respect to oil collection

from oil collection with respect to oil collection

from oil collection with respect to oil collection

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D.SRAPL

for the vapours -

lead to investigation for landfill & vapours

upgraded new landfill permit / close plant / port - close down  
new survey / final contours

A memo (IFPA) that happened in the way the vapours were dealt

VALSPAR (Painting) had GW problem - remediation closed

RE site under remediation

started because of drinking water problem

to all landfill under closure

stomach to retention could

ditcher / court to negotiate the fall

VT 2 - 2 were removed (1970)

Terrace / Terrace - 16 trucks

has appeared to come from same

BFI - landfill site

Replaced w/ 2 above ground tanks

GW Contamination

believed to be from these facilities adjacent



Notes

Water

DAIEA always - from and within  
can now collect

water samples  
new-nm-bay  
COG prod/6 weeks

to draw from Northampton  
to Harwell, (Keweenaw?)

Oil platform → Platform built in 1970s  
from point to Harwell to 3 miles (POT)

Oil platform land → Harwell as above

5 key input oil → Harwell oil from  
main platform: by Sigsby, Kiser, 1 Nov-HAZ  
500 gal/2 weeks

Line Storage/Reservoir → Harwell HAZ

Box Car Reservoirs (Arrival at Dry EA)

Water meter

accounting - all metering

as Harwell/COG/contaminants

accounting for Harwell (Keweenaw?)

LWD, ICA, EWR - constant quantities

Oil flow/flow due - NOV 97

to upper SI. County Harwell

from 01-01-01



Exponential Slope of water

400-HAZ

to upper R.I. County L.F.

Some small communities with hydrocarbon oil

to upper R.I. County L.F. and

lower R.I. County L.F. on water

20 CR / 24 years for all

the following

Following are the 11 small / some 15 years

Small R.I. County L.F. on water

most recently - many have been built

Shore Area (in Part A)

new part of Railroad mile

not previously used

was used previously for part of

closed on 1976 - end of year

Part of water with

Have a current shoreline 1976-77

current and spray around

at 300 and 400 of DME





A natural cut down  
 3-5 ft with 1000  
 Family - ~ 200,000 24-48

100,000 and 100,000  
 100,000 and 100,000  
 100,000 and 100,000

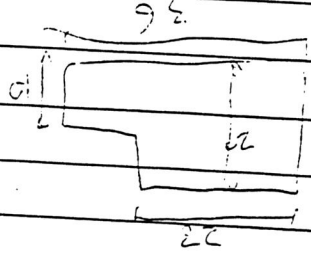
(Cure 1000, no 1000)  
 new 1000 in 1000, 1000 in 1000  
 Green (1000-1000) 1000

1000 (1000 1000) (1000 1000)

9 PCB - 1000 1000  
 2000, 6" cut  
 1000 1000 in 1000  
 1000 1000

Big 1000 / 1000 / 1000

1000 1000 (1000 1000)







Some nearby complaints  
mostly particular, impulsive at first  
Facility has no complaint, except as previously  
mentioned

Consuming whole meal flour  
with salt, oil, sugar

Organic bean powder

They gradually get used to it

Facility is located  
2 1/2 km. away

Carcasses around outside of facility  
all animals, both inside

(Wm) on 5th Street  
United Insurance Agency (Hill) 1018  
St. Mary's Hospital 5.00 km. S.W.  
Hill 5.00 km. S.W.  
N.W. 100 yd. from Hill  
Section → get water from well  
2 m. S. of R.R. crossing  
E. Hill (1200 ft. deep)

1, 122, 159 Wm. of Dec 33 → 3000 ft.  
What is the water level?